

Abstract

A rail-to-rail operational amplifier to extract a true mean of two signals. The amplifier includes a first amplifier input stage adapted to operate when a mean of the two signals is near an upper rail voltage. A second amplifier input stage is adapted to operate when the mean of the two signals is near a lower rail voltage. A transitioning circuit is adapted to control how much each of the first and the second amplifier input stages contributes to an input of a high-gain amplifier output stage. An output of the high-gain amplifier output stage is fed back to both the n-type amplifier input stage and the p-type amplifier input stage via a matched buffer stage.